

REMARKS

The Office Action dated March 23, 2004, has been received and reviewed. Claims 1-23, 35-50, and 55-61 are pending in this application. Claims 5, 23, 26-38, 44-47 and 51-66 have been withdrawn from consideration by the Examiner due to a restriction requirement. Applicants have canceled these claims without prejudice or disclaimer. Applicants respectfully request reconsideration of the application in view of the amendments above and remarks below.

Applicants wish to thank Examiner Epps-Ford for the opportunity to conduct a personal interview for this application on July 15, 2004, at which Applicant's representative, Jarett K. Abramson, was present. The pending rejections and cited art were discussed and the present amendments and remarks are presented herein in response to those discussions and to address other issues raised in the Office Action that were not discussed in the interview.

I. Claim Amendments

Claim 1 has been amended to include the elements of Claims 2-4. Claims 2-4 have been canceled without prejudice or disclaimer. Claim 6 has been amended to provide antecedent basis from Claim 1 due to the claim amendments. Claim 11 has been amended to include the elements of Claims 12-13. Claims 12-13 have been canceled without prejudice or disclaimer. Claim 18 has been amended to include the elements of Claims 20-22. Claims 20-22 have been canceled without prejudice or disclaimer. Claim 24 has been amended to provide antecedent basis due to the claim amendments to Claim 18. Claim 39 has been amended to include the elements of Claim 40-41. Claims 40-41 have been canceled without prejudice or disclaimer. Claim 48 has been amended to include the elements of Claim 49. Claim 49 has been canceled without prejudice or disclaimer. Claims 67-76 have been added. Support for these claims may be found on page 12, first full paragraph. Further support for Claims 69 and 76 may be found in Example 3.

II. Claim Rejections – 35 U.S.C. § 112, first paragraph, written description

Claims 1-4, 7-11, 13-20, 22, 25, 39, 41-43 and 48-50 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly failing to comply with the written description requirement. Applicants respectfully traverse this rejection. As noted above, Applicants have amended Claims 1, 11, 18, 39 and 48 to recite either SEQ ID NO: 1 and/or an active fragment of a MARCKS protein comprising from 10 to 50 contiguous amino acids from SEQ ID NO: 3; or an amino acid sequence that is 95% identical to SEQ ID NO: 1 or the active fragment of a MARCKS protein comprising from 10 to 50 contiguous amino acids from SEQ ID NO: 3. Support for these amendments can be found in the canceled claims and throughout the specification.

As discussed during the interview, Applicants have enclosed with this response a declaration under 37 C.F.R. § 1.132 from one of the co-inventors, Dr. Linda Martin. This declaration illustrates that an active fragment of a MARCKS protein inhibits mucin release *in vivo*. Applicants submit that they were in possession of the scope of compounds as presently claimed. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 112, first paragraph rejection of Claims 1, 7-11, 14-19, 39, 42-43, 48 and 50.

III. Claim Rejections – 35 U.S.C. § 112, first paragraph, enablement

Claims 1-4, 6-22, 24-25, 27-32, 37-41 and 46-51 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly not reasonably providing enablement. Applicants respectfully traverse this rejection. As noted above, Applicants have amended Claims 1, 11, 18, 39 and 48 to recite either SEQ ID NO: 1; and/or an active fragment of a MARCKS protein comprising from 10 to 50 contiguous amino acids from SEQ ID NO: 3; or an amino acid sequence that is 95% identical to SEQ ID NO: 1 or the active fragment of a MARCKS protein comprising from 10 to 50 contiguous amino acids from SEQ ID NO: 3. Support for these amendments can be found in the canceled claims and throughout the specification.

Again, as discussed during the interview, Applicants have enclosed with this response a Rule 132 declaration from one of the co-inventors, Dr. Linda Martin. This declaration illustrates that an active fragment of a MARCKS protein inhibits mucin release *in vivo*. In direct contrast, a missense control peptide with the same amino acid composition had no effect *in vivo*. See, Figure 1 attached with the Rule 132

declaration. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 112, first paragraph to Claims 1, 6-11, 14-19, 24-25, 39, 42-43, 48 and 50.

Applicants further submit that the diseases listed in Claim 19 all have a common pathology as these diseases all affect mucus secretion in the airways of a subject. Accordingly, Applicants respectfully submit that the rejections to this claim should also be withdrawn.

IV. Claims Rejections – 35 U.S.C. § 103

Claims 1-4 and 6 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious in view of Steel et al., McCool et al., and Nakamura et al. in view of Graff et al., Staddon et al. and Ali et al. Applicants respectfully traverse this rejection for the reasons set forth below.

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claim, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). To support combining references, evidence of a suggestion, teaching, or motivation to combine must be clear and particular, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has also stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000). Furthermore, as recently affirmed by the Court of Appeals for the Federal Circuit in *In re Sang-su Lee*, a factual question of motivation is material to patentability, and cannot be resolved on subjective belief and unknown authority. See *In re Sang-su Lee*, 277 F.3d 1338 (Fed. Cir. 2002).

Respectfully, as will be discussed below, the Official Action fails to meet the requirements for a prima facie showing of obviousness under § 103.

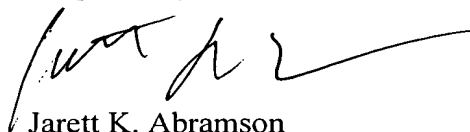
Steel et al., McCool et al. and Nakamura et al all discuss protein kinase C (PKC) cell signaling pathways. More specifically they note that mucin-like secretion may be mediated through the PKC signaling pathway. However, none of these references teaches or suggests a method of inhibiting mucus secretion comprising administering a fragment of a MARCKS protein as recited by the present claims. Furthermore these references indicate that a more complete understanding of the PKC signaling pathway would be beneficial. Graff et al. discusses the MS-PSD peptide (SEQ ID NO: 2) as a phosphorylation site for PKC. Both Staddon and Ali discuss the MARCKS protein as a PKC specific substrate. Graff et al., Staddon et al. and Ali et al. all fail to teach or suggest a method of inhibiting mucus secretion comprising administering a fragment of a MARCKS protein. There is no connection between the MARCKS protein and mucus secretion on the basis of these references. Furthermore, there is no motivation to combine these references with Steel et al., McCool et al. and Nakamura et al as they focus on different methods. Additionally, there is expectation of success in combining these references. Thus, there is no evidence in the prior art to combine or modify these references to methods of inhibiting mucus secretion as claimed in Claims 1 and 6 of the present application. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections to Claims 1 and 6.

CONCLUSION

In view of the remarks presented herein, Applicants respectfully submit that the claims define patentable subject matter. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

It is not believed that an extension of time and/or additional fee(s)-including fees for net addition of claims-are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to our Deposit Account No. 50-0220.

Respectfully Submitted,



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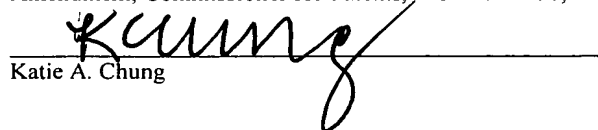
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Katie A. Chung